 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: IAD02LA080		Aircraft Registration Number: N1177M	
		Occurrence Date: 08/01/2002		Most Critical Injury: Serious	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Patuxent River	State MD	Zip Code 20670	Local Time 1420	Time Zone EDT	
Airport Proximity: On Airport		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer Cessna		Model/Series 172K		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>On August 1, 2002, at 1420 eastern daylight time, N1177M, a Cessna 172K, was substantially damaged during a forced landing while on approach to Patuxent River Naval Air Station/Trapnell Field (NHK), Patuxent River, Maryland. The certificated commercial pilot received serious injuries and the passenger received minor injuries. Visual meteorological conditions prevailed, and a visual flight rules (VFR) flight plan was filed for the flight which originated at Myrtle Beach International Airport (MYR), Myrtle Beach, South Carolina at 1155. The personal flight was conducted under 14 CFR Part 91.</p> <p>The pilot reported that he had flown from Patuxent River to Myrtle Beach 2 days prior to the accident for a short vacation before beginning Navy test pilot school. The pilot flew direct to Myrtle Beach, and upon landing the airplane's Hobbs meter indicated the flight duration had been 3.7 hours.</p> <p>On the day of the accident, the pilot received a weather briefing from Anderson Flight Service Station (FSS) for the return flight from Myrtle Beach to Patuxent River, and filed a VFR flight plan. He then performed a pre-flight inspection and visually checked the fuel gauges inside the airplane. According to the pilot, the gauges indicated that the tanks were about 1/4 - 1/2 full, which he estimated to be about 8 gallons of fuel per tank. The pilot stated that he was unable to determine exactly how much fuel was in the tanks because he did not have a way to measure it.</p> <p>The pilot added 20 gallons of fuel to the tanks, and estimated that he had a total of 36 gallons of fuel onboard, or 4 1/2 hours of flight time. He started the airplane around 1145, taxied to the runway, performed a runup check, and checked the fuel gauges again. They indicated about 3/4 tank each side, which he estimated to be 36 gallons of total fuel.</p> <p>The pilot flew direct to Patuxent River at an altitude of 5,500 feet, and a power setting between 2,400-2,500 rpm. The carburetor heat was applied "occasionally" as the carb ice detector indicated "prudent" and the engine was leaned "periodically." The pilot performed several ground speed calculations during the flight, indicating a consistent groundspeed of 100-110 mph. The pilot did not perform any fuel burn calculations during the flight.</p> <p>When the pilot was about 10 miles from the airport, he was instructed by the tower controller to expect a left base entry for a full-stop landing on runway 02. About 3 miles from the airport, the pilot was instructed to perform a 360-degree turn for spacing and to change to a straight-in approach for runway 06. As the pilot was leveling the airplane from the turn, the airplane's engine "stopped producing power." The pilot then checked the fuel gauges which indicated 1/8 full on the left side, and 1/4 full on the right side. He increased the throttle, which momentarily brought power back to the engine. The airplane then pitched up, and the engine lost power again. The pilot initiated a 90-degree turn and held a nose-high attitude to clear trees in the flight path. Once over the tree line, the pilot lowered the nose and performed a forced landing to a</p>					
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Narrative (Continued)

field.

According to a Federal Aviation Administration (FAA) inspector, the airplane impacted the ground approximately 1/2 mile short of runway 06, on an approximate heading of 150 degrees. Visual examination of the fuel tanks revealed that the left wing tank was "completely dry," and approximately 1/8 of an inch of fuel was observed in the right wing fuel tank. The fuel selector was observed between the "both" and "right" positions, and the mixture and throttle control levers were observed in the full forward position.

The engine was examined at a salvage facility in Clayton, Delaware, under the supervision of a Safety Board Investigator. The fuel lines from the wing roots to the gascolators were absent of debris and obstructions, and the carburetor and gascolator fuel screens were also absent of debris.

Less than 1 teaspoon of fuel was observed in the gascolator bowl. A test run of the engine was performed, on the airframe, by introducing fuel directly to the carburetor. The engine started without hesitation and ran continuously through a variety of power settings.

During the examination, it was noted that the Stewart Warner fuel level transmitters had been removed from the airplane and were unable to be tested with the fuel gauges at the salvage facility. The manager of the Patuxent River Navy Flying Club was questioned regarding the disposition of the transmitters. He stated that he had removed them from the airplane prior to the salvage company's arrival, and retained them for his own testing. He further stated that when he removed the transmitters, he was aware of Safety Board instructions specifying that the airplane had not been released.

The fuel level transmitters were then shipped to the Safety Board, and tested with the fuel gauges. No mechanical anomalies were noted.


According to flight logs kept by the Patuxent River Navy Flying Club, the accident airplane was checked out by the pilot on July 29, 2002 at a Hobbs time of 2214.5 and returned at a Hobbs time of 2215.9. An entry for 16.8 gallons of fuel was displayed on the same line, and an interview with a representative of the flying club revealed that aircraft are always refueled when they return from a flight. Another entry on the following line of the log indicated that the airplane was checked out again by the pilot on the day of the accident, at a Hobbs time of 2215.9. The Hobbs time at the accident site was 2222.8.


A Service Bulletin (SEB99-18) was issued by the Cessna Aircraft Company on November 1, 1999, which addressed inspections of the Stewart Warner fuel quantity indicating system. The purpose of the inspections was to verify that each fuel tank gauge indicated empty when the fuel tank contained only unusable fuel. The Service Bulletin stated that these inspections shall be accomplished within the next 100 hours of operation or 12 months, whichever came first. After the initial inspection, the inspection should be reaccomplished every 12 months thereafter.


Examination of the airplane and engine logbooks revealed no entries which addressed compliance with the Service Bulletin.

The pilot reported 815 hours of total flight experience, 124 of which were in fixed-wing aircraft, and 691 were in rotorcraft. In addition, the pilot had accumulated 9 hours in make and model.

The weather reported at Patuxent River, at 1355, included winds from 040 degrees at 9 knots, visibility 7 miles, few clouds at 3,000 feet, temperature 34 degrees, and dew point 19 degrees.

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Landing Facility/Approach Information						
Airport Name Patuxent River NAS		Airport ID: NHK	Airport Elevation 39 Ft. MSL	Runway Used 06	Runway Length 11809	Runway Width 200
Runway Surface Type: Grass/turf						
Runway Surface Condition: Dry						
Type Instrument Approach: NONE						
VFR Approach/Landing: Forced Landing						
Aircraft Information						
Aircraft Manufacturer Cessna		Model/Series 172K		Serial Number 17258677		
Airworthiness Certificate(s): Normal						
Landing Gear Type: Tricycle						
Homebuilt Aircraft? No		Number of Seats: 4	Certified Max Gross Wt. 2300 LBS	Number of Engines: 1		
Engine Type: Reciprocating		Engine Manufacturer: Lycoming	Model/Series: O-320	Rated Power: 150 HP		
- Aircraft Inspection Information						
Type of Last Inspection 100 Hour		Date of Last Inspection 07/2002	Time Since Last Inspection 13 Hours	Airframe Total Time 3430 Hours		
- Emergency Locator Transmitter (ELT) Information						
ELT Installed? Yes		ELT Operated? Yes	ELT Aided in Locating Accident Site? No			
Owner/Operator Information						
Registered Aircraft Owner Samuel W Carson Jr.		Street Address				
		City Waldorf	State MD	Zip Code 20603		
Operator of Aircraft Patuxent River Naval Flying Club		Street Address				
		City NAS Patuxent River	State MD	Zip Code 20670		
Operator Does Business As:			Operator Designator Code:			
- Type of U.S. Certificate(s) Held: None						
Air Carrier Operating Certificate(s):						
Operating Certificate:			Operator Certificate:			
Regulation Flight Conducted Under: Part 91: General Aviation						
Type of Flight Operation Conducted: Personal						
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		Occurrence Type: Accident			
First Pilot Information					
Name		City		State	Date of Birth
On File		On File		On File	On File
					Age
					28
Sex: M	Seat Occupied: Left	Principal Profession: Military Pilot		Certificate Number: On File	
Certificate(s): Commercial					
Airplane Rating(s): Single-engine Land					
Rotorcraft/Glider/LTA: Helicopter					
Instrument Rating(s): Airplane; Helicopter					
Instructor Rating(s): None					
Type Rating/Endorsement for Accident/Incident Aircraft? No				Current Biennial Flight Review? 06/2002	
Medical Cert.: Class 2		Medical Cert. Status: Valid Medical--no waivers/lim.		Date of Last Medical Exam: 05/2002	
- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night
Total Time	815	9	99	25	160
Pilot In Command(PIC)	310	9	20	0	
Instructor					
Last 90 Days	46	6		25	1
Last 30 Days	21	6			
Last 24 Hours	3				
Seatbelt Used? Yes		Shoulder Harness Used? Yes		Toxicology Performed? No	
				Second Pilot? No	
Flight Plan/Itinerary					
Type of Flight Plan Filed: VFR					
Departure Point		State	Airport Identifier	Departure Time	Time Zone
Myrtle Beach		SC	MYR	1145	EDT
Destination		State	Airport Identifier		
Same as Accident/Incident Location			NHK		
Type of Clearance: None					
Type of Airspace: Class D; Restricted Area					
Weather Information					
Source of Briefing: Flight Service Station					
Method of Briefing: Telephone					

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Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
NHK	1355	EDT	39 Ft. MSL	0 NM	0 Deg. Mag.
Sky/Lowest Cloud Condition: Few			3000 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: None			Ft. AGL	Visibility: 7 SM	Altimeter: 29.91 "Hg
Temperature: 34 °C	Dew Point: 19 °C	Wind Direction: 40		Density Altitude: 2329 Ft.	
Wind Speed: 9	Gusts:	Weather Conditions at Accident Site: Visual Conditions			
Visibility (RVR): Ft.	Visibility (RVV) SM	Intensity of Precipitation:			
Restrictions to Visibility: None					
Type of Precipitation: None					
Accident Information					
Aircraft Damage: Substantial		Aircraft Fire: None		Aircraft Explosion: None	
Classification: U.S. Registered/U.S. Soil					
- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot		1			1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers			1		1
- TOTAL ABOARD -		1	1		2
Other Ground					
- GRAND TOTAL -		1	1		2
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Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

Jill M. Andrews

Additional Persons Participating in This Accident/Incident Investigation:

Bruce McGray
FAA/FSDO
Dulles, VA

Todd Sigler
Cessna Aircraft Company
Wichita, KS

David Moore
Lycoming Engines
Ardsley, PA